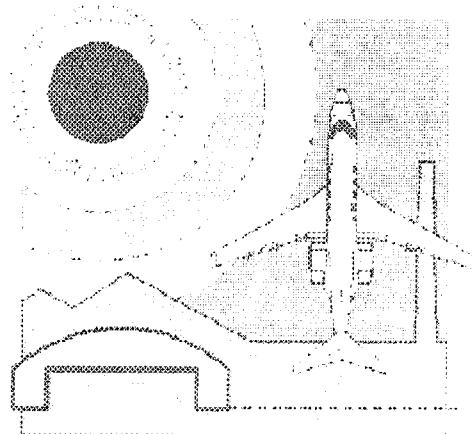


SECTION 9: AIRPORT LAYOUT PLAN



BISBEE-DOUGLAS INTERNATIONAL AIRPORT Douglas / Cochise County, Arizona

AIRPORT MASTER PLAN - 1997

SECTION 9: AIRPORT LAYOUT PLAN

PREPARATION OF THE AIRPORT LAYOUT PLAN (ALP)

The Airport Layout Plan (ALP) is a set of scaled drawings that depict the existing and ultimate proposed airport land and facilities. A typical ALP drawing set consists of the following elements:

- ▶ Title Sheet
- ▶ Airport Layout Drawing
- ▶ Terminal Area Layout(s)
- ▶ Runway RPZ Area Plan & Profile Sheets
- ▶ Airport Airspace Drawing(s)
- ▶ Airport Property Map
- ▶ Airport Land Use Drawing

The BDI Airport Layout Plan set includes all of the above listed elements. The Airport Property Map and Airport Land Use Drawing are combined into an Airport Land Inventory and Horizontal Control Plan (sheet 8), which includes specific horizontal and vertical control for the airport property and runway geometry.

The Airport Layout Plan set (10 sheets) is included at the end of this section in reduced format. The full size (24" x 36") drawings are considered the official ALP, and a part of this Master Plan document.

All airport development carried out at Federally obligated airports (generally those which have received federal funding assistance grants within the past twenty years) must be done in accordance with an FAA-approved ALP. The improvements shown on the ALP must conform to the FAA design standards that existed at the time of plan approval, unless specific waivers are granted.

There are no proposed facilities which do not conform with current FAA design criteria.

Section 9: Airport Layout Plan

REFINEMENT OF DEVELOPMENT ALTERNATIVE #3

The Bisbee-Douglas International Airport ALP was prepared based on Development Alternative #3, which was selected by the BDI Planning Advisory Committee (PAC) by majority vote. The layout of the various airport facilities was refined in the ALP preparation process in order to address comments from the PAC and ADOT Division of Aeronautics, and to optimize the utility and constructibility of the improvements in a phased approach.

The following are the major refinements made to Development Alternative #3:

- ▶ The location of the ultimate threshold for Runway 35 was relocated to the north such that the entire Runway Protection Zone will be within airport property, and north of the right-of-way for Highway 191. No easement acquisition will be required for development of this runway.
- ▶ After examination of USGS topographic maps, it was discovered that a precision approach to Runway 3 would provide a safer operating environment than the same approach to Runway 21, as shown on the Development Alternative #3 layout. The 50:1/40:1 approach surface required by FAR Part 77 would result in a terrain penetration of some 315' at a point about 4½ miles northeast of the ultimate Runway 21 threshold (Bald Knob). The approach surface to Runway 3 would be clear of obstructions. The precision approach and MALSR were moved to Runway 3 on the ALP.
- ▶ At the request of the PAC, reconstruction of Taxiway T-1 was included in the development program.
- ▶ Taxiway turnaround/runup areas have been added to the ends of Runway 3-21.
- ▶ At the request of ADOT, a full parallel taxiway to serve Runway 3-21 has been added to the Ultimate Term development recommendations, and is indicated on the ALP.

Section 9: Airport Layout Plan

DEVELOPMENT PHASING PLAN

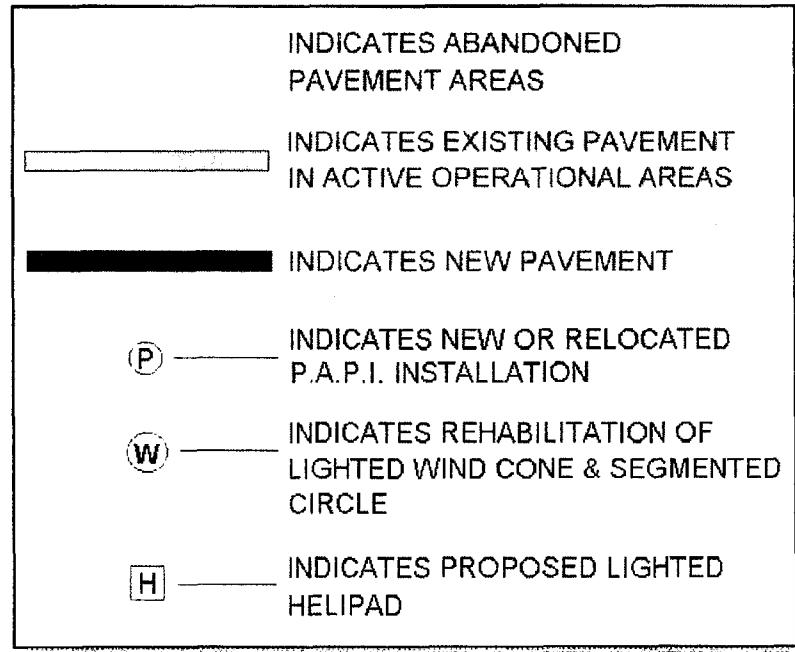
A schedule of recommended improvements was presented in Section 6 of this Master Plan study. The schedule was broken down into three general development phases, as follows:

- ▶ **Phase 1:** Immediate Term Development (1997-1999)
- ▶ **Phase 2:** Short-Term Development (2000-2005)
- ▶ **Phase 3:** Ultimate Term Development (2006-2016)

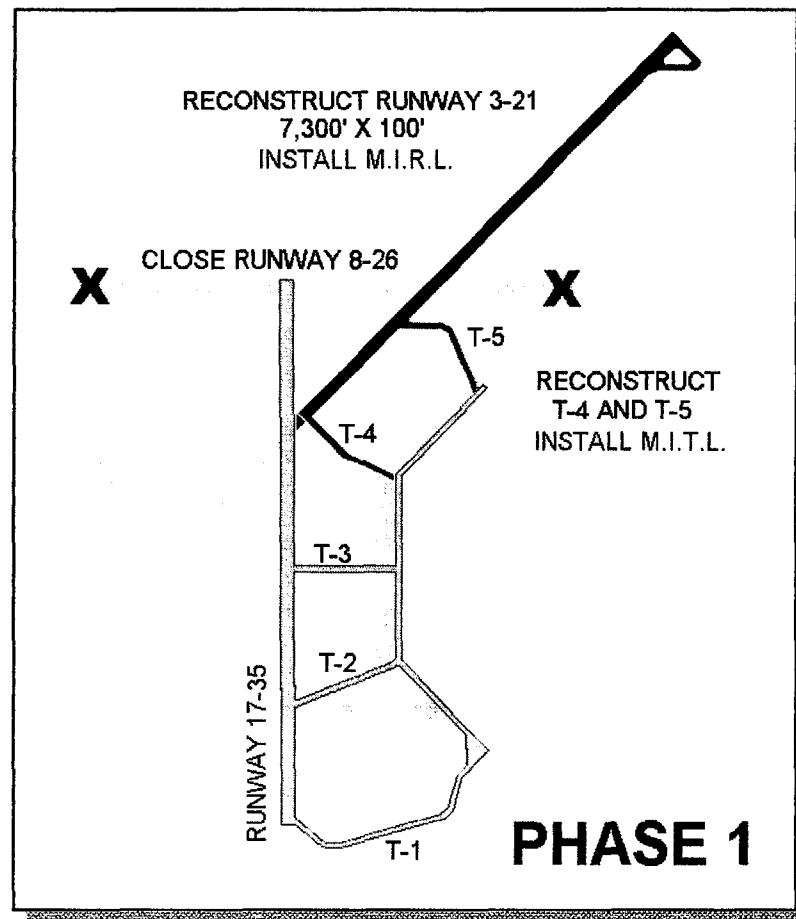
These three general development phases may be further broken down into several projects, as dictated by the actual future demand and the future availability of funding.

The three phases are described and illustrated on the following pages. Note that the phasing sketches reflect only the major recommended improvements, and exclude renovation of buildings.

LEGEND FOR PHASING PLAN SKETCHES



Section 9: Airport Layout Plan



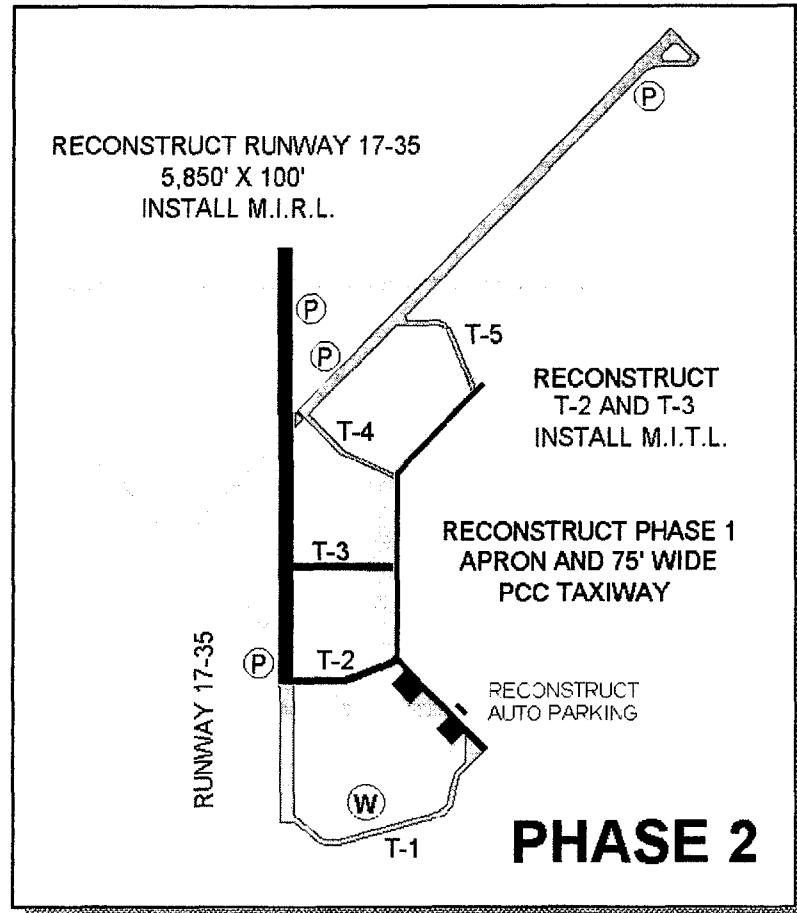
Phase 1:
Immediate Term
Development (1997-1999)

The major improvements which are recommended in the Immediate Term include closure of Runway 8-26, reconstruction of Runway 3-21 as the new primary runway, reconstruction of Taxiways T-4 and T-5, and installation of Medium Intensity Runway and Taxiway Lighting (MIRL and MITL) on reconstructed runways and taxiways.

The Phase 1 threshold of Runway 3 was located such that airport closure during construction will be minimized (Runway 17-35 may remain in use during most of the construction period).

It will be necessary to acquire an 87.48 acre parcel of land prior to initial construction of Runway 3-21.

Section 9: Airport Layout Plan

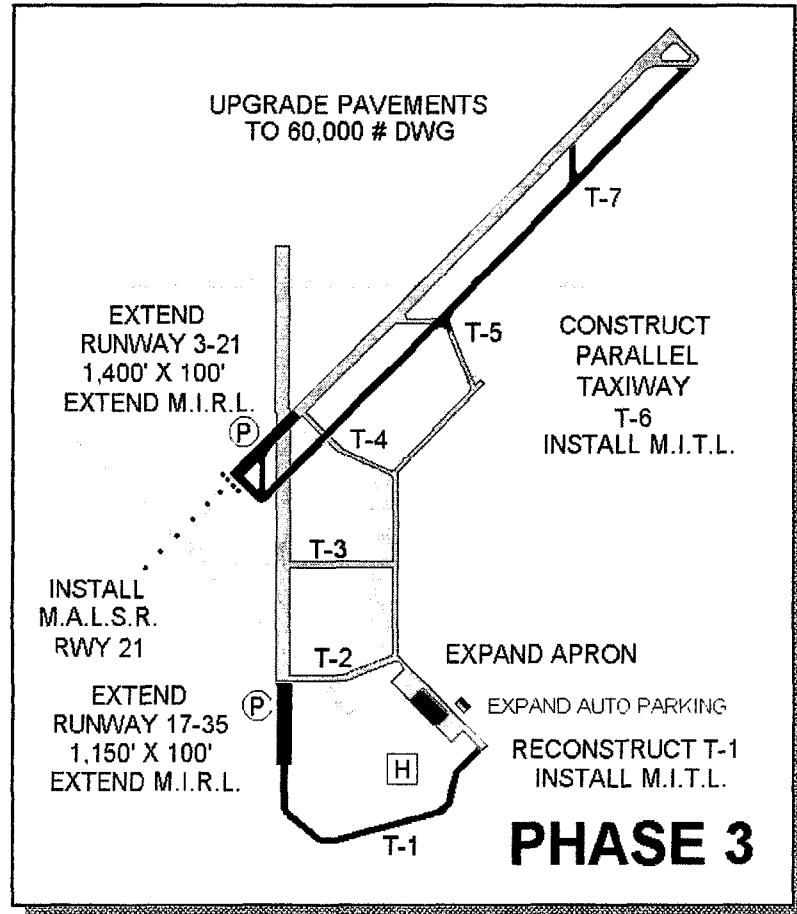


Phase 2: Short-Term Development (2000-2005)

The major improvements recommended in the Short-Term Development Plan include reconstruction of Runway 17-35 to serve as the secondary or crosswind runway, reconstruction of existing Taxiways T-2 and T-3, rehabilitation of the entire 75' wide PCC taxiway/apron area, apron and auto parking area reconstruction, installation of MIRL and MITL on the reconstructed areas, rehabilitation of the existing lighted wind cone/segmented circle, and installation of Precision Approach path Indicators (PAPI) on all runway ends.

The initial phase of development for Runway 17-35 includes relocation of the Runway 17 threshold 420' to the north to avoid additional ultimate land/easement acquisitions for the Runway 35 approach.

Section 9: Airport Layout Plan



Phase 3: Ultimate-Term Development (2006-2016)

Phase 3 (Ultimate-Term) major improvement recommendations include upgrading airport pavements to accommodate 60,000 pound aircraft, extension of both runways to serve larger aircraft, construction of a full MITL-lighted parallel taxiway (Taxiway T-6) for Runway 3-21, a new lighted helipad, reconstruction of Taxiway T-1 (with MITL installation), construction of a new cross-taxiway (T-7), relocation of the Runway 3 and 35 PAPI's, a MALSR on the Rwy 3 approach, and expansion of the aircraft apron and auto parking area.

If scheduled airline service becomes a reality at BDI, it will also be necessary to modify the Terminal Building to comply with security requirements, and to provide passenger accommodations and baggage handling services.

**CAPITAL IMPROVEMENT PLAN
1997-2016**

CAPITAL IMPROVEMENT PROGRAM 1997-2016

Funding Sources: FAA, ADOT, & Sponsor

IMMEDIATE TERM 1997 - 1999

	Estimated Cost and Funding Source			
	Total	FAA (91.00%)	State (4.47%)	Local (4.47%)
1. Fee Acquisition For Approach Protection of Runway 21	\$262,440	\$238,978	\$11,731	\$11,731
2. Environmental Assessment	\$60,000	\$54,636	\$2,682	\$2,682
3. Close Runway 8-26	\$5,000	\$4,554	\$223	\$223
4. Reconstruct Primary Runway 3-21 to 30,000 LB (SWG)	\$1,360,000	\$1,238,416	\$60,792	\$60,792
5. Install M.I.R.L. on Runway 3-21	\$251,000	\$228,560	\$11,200	\$11,200
6. Remove Obstructions to FAR PART 77 Surfaces	(Included with Item 3)			
7. Reconstruct Taxiway T-4	\$99,000	\$90,150	\$4,425	\$4,425
8. Reconstruct Taxiway T-5	\$113,000	\$102,898	\$5,051	\$5,051
9. Install M.I.T.L. on T-4	\$79,000	\$71,936	\$3,532	\$3,532
10. Install M.I.T.L. on T-5	\$72,000	\$65,564	\$3,218	\$3,218
Subtotal	\$2,301,440	\$2,095,692	\$102,874	\$102,874
11. Engineering & Construction Services (18% of Subtotal)	\$414,260	\$377,224	\$18,518	\$18,518
TOTAL	\$2,715,700	\$2,472,916	\$121,392	\$121,392

NOTE: All costs are in 1997 dollars

CAPITAL IMPROVEMENT PROGRAM 1997-2016

Funding Sources: FAA, ADOT, & Sponsor

SHORT TERM - 2000-2005

	Estimated Cost and Funding Source			
	Total	FAA (91.00%)	State (4.47%)	Local (4.47%)
1. Reconstruct Crosswind Rwy 17-35 to 30,000 lb (SWG)	\$777,000	\$707,536	\$34,732	\$34,732
2. Install M.I.R.L. on Runway 17-35	\$202,000	\$183,940	\$9,030	\$9,030
3. Install M.I.A.L.S. with R.A.I.L. (MALS) on Rwy 3-21	\$200,000	\$182,120	\$8,940	\$8,940
4. Reconstruct access taxiways to serve both runways (30,000 lb SWG) - 6000'x35' total	\$195,000	\$117,568	\$8,716	\$8,716
5. Install M.I.T.L. on reconstructed access taxiways.	\$80,000	\$72,848	\$3,576	\$3,576
6. Rehabilitate existing lighted wind cone and segmented circle.	\$12,000	\$10,928	\$536	\$536
7. Install PAPI on all four runway ends.	\$75,000	\$68,294	\$3,353	\$3,353
8. Rehabilitate existing 75 ft. wide PCC apron/taxiway	\$220,000	\$200,332	\$9,834	\$9,834
9. Construct passenger loading service apron and large aircraft transient ramp.	\$186,000	\$169,372	\$8,314	\$8,314
10. Construct new light aircraft parking apron with 26 tiedowns.	\$236,000	\$214,902	\$10,549	\$10,549
11. Reconstruct and expand auto parking area.	\$62,000	\$56,456	\$2,772	\$2,772
Subtotal	\$2,245,000	\$2,044,296	\$100,352	\$100,352
12. Engineering and Construction Services (18% of subtotal)	\$404,100	\$367,974	\$18,063	\$18,063
TOTAL	\$2,649,100	\$2,412,270	\$118,415	\$118,415

Note: All costs are in 1997 dollars

CAPITAL IMPROVEMENT PROGRAM 1997-2016
Funding Sources: Historic Preservation Grant & Sponsor

SHORT TERM - 2000-2005

	Total	Preservation Grant (50%)	Local (50%)
1. Renovate Terminal Building	*\$545,700	\$272,850	\$272,850
2. Renovate Hangars #1, #2 and #3	\$186,700	\$93,350	\$93,350
3. Renovate Hangar #4	\$72,500	\$36,250	\$36,250
4. Remove wood-frame portion of Bldg. #2; Rehabilitate steel frame portions	\$292,200	\$0	\$292,200
5. Remove Bldg. #3	\$15,000	\$0	\$15,000
Subtotal	\$1,112,100	\$402,450	\$709,650
6. Architectural, Engineering & Construction Phase Services (20% of subtotal)	\$222,420	\$80,490	\$141,930
TOTAL	\$1,334,520	\$482,940	\$851,580

* Represents Maximum Estimated Cost

Note: All costs are in 1997 dollars

CAPITAL IMPROVEMENT PROGRAM 1997-2016

Funding Sources: FAA, ADOT, & Sponsor

ULTIMATE TERM - 2006-2016

	Estimated Cost and Funding Source			
	Total	FAA (91.00%)	State (4.47%)	Local (4.47%)
1. Upgrade Primary Runway 3-21 to 60,000 lb. (SWG)	\$327,000	\$297,766	\$14,617	\$14,617
2. Extend primary runway 3-21 by 1,400'	\$475,000	\$432,536	\$21,232	\$21,232
3. Environmental Assessment (Rwy extension/precision approach)	\$60,000	\$54,636	\$2,682	\$2,682
4. Provide precision instrument approach to Runway 3-21	Costs vary and are unknown			
5. Upgrade Crosswind Rwy 17-35 to 60,000 lb. (SWB)	\$262,000	\$238,578	\$11,711	\$11,711
6. Extend Crosswind Rwy 17-35 by 1,150'	\$390,000	\$355,134	\$17,433	\$17,433
7. Environmental Assessment (Rwy 17-35 extension)	\$60,000	\$54,636	\$2,682	\$2,682
8. Provide Straight-In Non-Precision Instrument Approach to Rwy 17-35	0	0	0	0
9. Strengthen all taxiways to 60,000 lbs (SWG)	\$172,000	\$156,624	\$7,688	\$7,688
10. Construct full parallel taxiway to Rwy 3-21, taxiways T-1 and T-7	\$960,000	\$874,176	\$42,912	\$42,912
11. Install M.I.T.L. taxiways	\$400,000	\$364,240	\$17,880	\$17,880
12. Expand light aircraft apron to add 18 tiedowns	\$315,000	\$286,838	\$14,081	\$14,081
13. Expand terminal auto parking for 23 add'l spaces	\$37,000	\$33,692	\$1,654	\$1,654
14. Install apron and parking floodlighting	\$39,000	\$35,514	\$1,743	\$1,743
15. Construct a paved and lighted 48"x48' helipad with FATO	\$68,500	\$62,376	\$3,062	\$3,062
Subtotal	\$3,565,500	\$3,246,746	\$159,377	\$159,377
16. Engineering & Construction Services	\$641,790	\$584,414	\$28,688	\$28,688
TOTAL	\$4,207,290	\$3,831,160	\$188,065	\$188,065

(1) Note: All costs are in 1997 dollars

(2) The costs of modifying the terminal building and the airside and landside facilities to accommodate scheduled airline service and of providing interior tenant improvements for Hangars #1-4 and Building #2 will vary depending on what exactly is to be done at that time. These improvements are best addressed in the future in a Master Plan update.

CAPITAL IMPROVEMENT PROGRAM 1997-2016

Funding Sources: ADOT & Sponsor

ULTIMATE TERM 2000-2016

IMPROVEMENTS NOT DESCRIBED ON PAGES 6-29 TO 6-33 WILL MOST LIKELY BE FUNDED BY THE SPONSOR WITH SOME ADOT-AERONAUTICS FUNDING AS SHOWN.

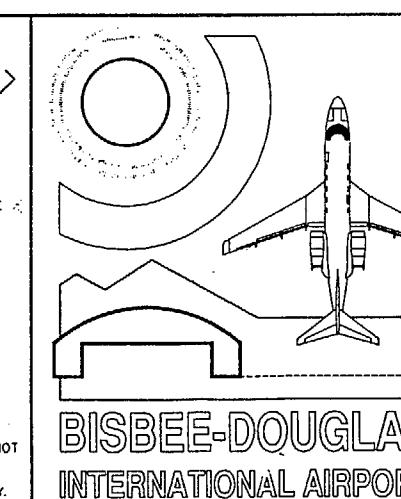
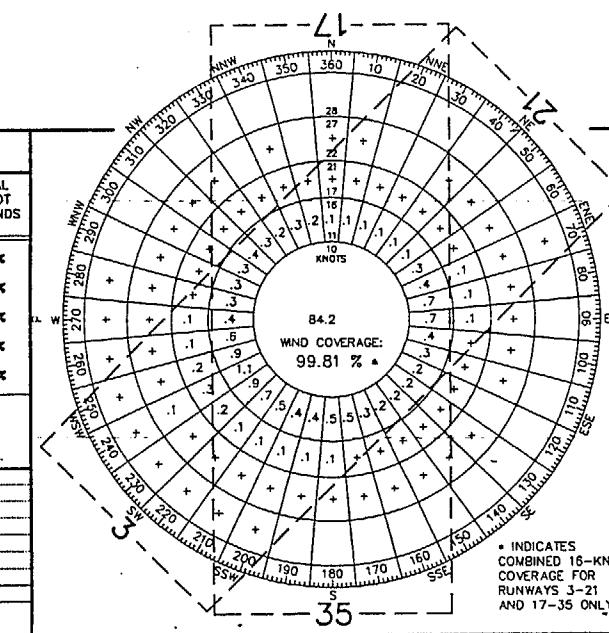
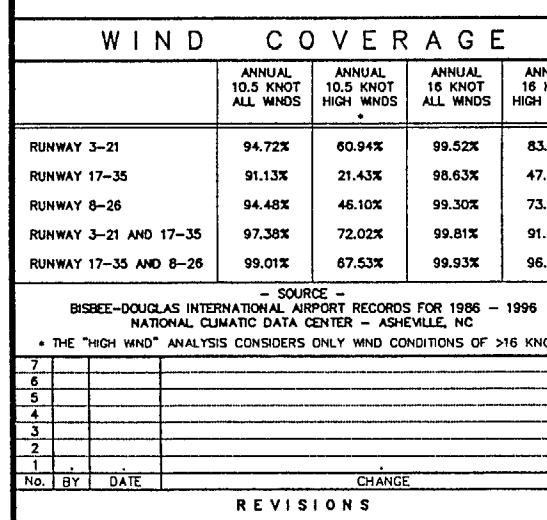
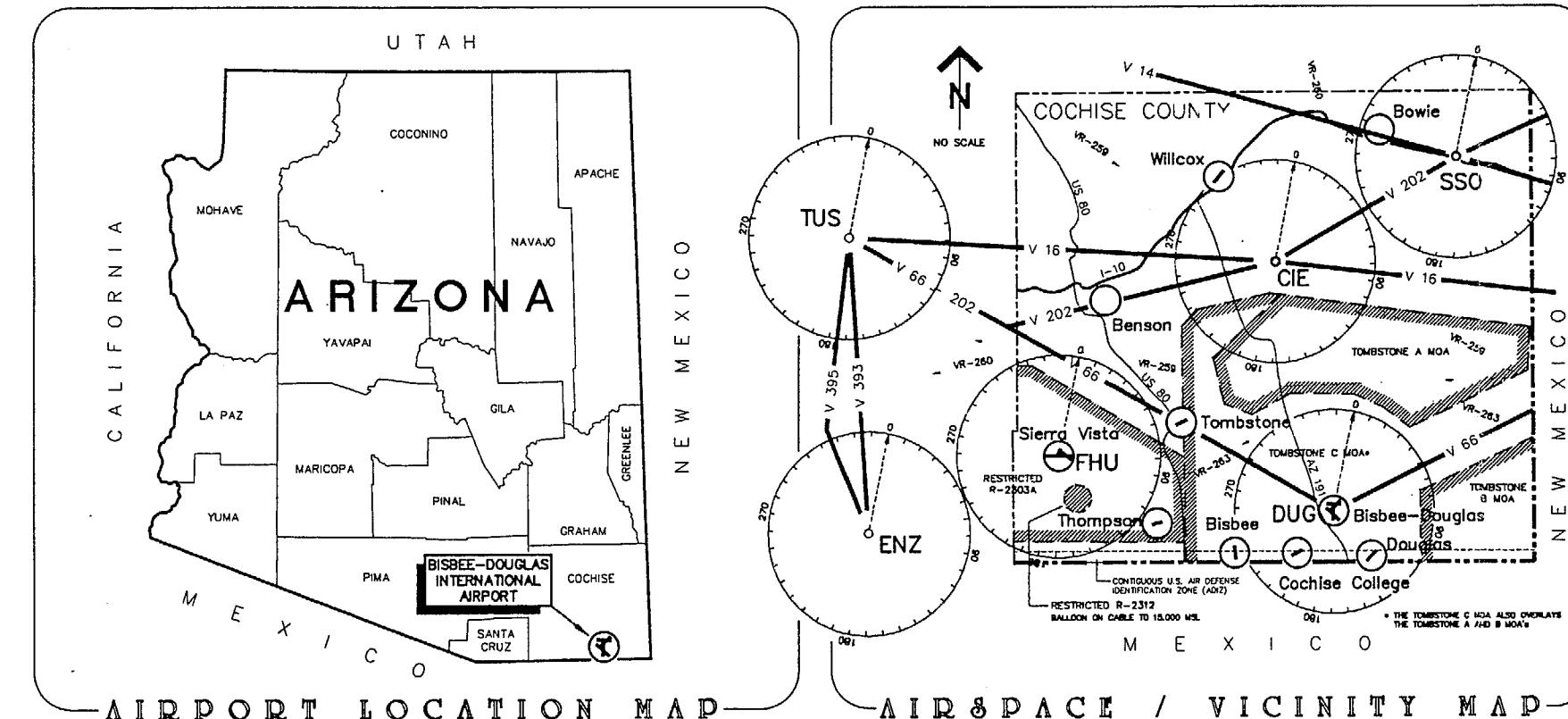
	Estimated Cost and Funding Source			
	Total	FAA (0%)	State (90%)	Local (10%)
1. Widen access road	\$163,000	0	\$146,700	\$16,300
2. Add truck route	\$135,000	0	\$121,500	\$13,500
3. Develop campground	Costs Vary - Unknown			
4. Ultimate aircraft parking - Hangars 1 and 3	\$111,000	0	0	\$111,000
5. Develop private hangar area	Costs Vary - Unknown			
6. Rehabilitate sewer system	\$81,000	0	0	\$81,000
7. Rehabilitate water system	\$244,000	0	0	\$244,000
Subtotal	\$734,000	0	\$268,200	\$465,800
8. Engineering and construction services (18% of Total)	\$132,120	0	\$48,276	\$83,844
TOTAL	\$866,120	0	\$316,476	\$549,644

NOTE: All costs are in 1997 dollars

AIRPORT LAYOUT PLAN

BISBEE-DOUGLAS INTERNATIONAL AIRPORT

DOUGLAS / COCHISE COUNTY, ARIZONA



	AIRPORT DATA		
		EXISTING	ULTIMATE
	AIRPORT ELEVATION	4151.3	4188.0
	AIRPORT REFERENCE POINT	LATITUDE 109°36'13.11" N LONGITUDE 109°36'02.38" W	031°28'08.92" N 109°36'13.11" W
	AIRPORT AND TERMINAL NAVIDS	VOR, GPS, DME	DGPS, VOR, DME
	AIRPORT VISUAL AIDS	BEACON	BEACON
	MEAN MAX. TEMP. OF HOTTEST MONTH	93.9° JUNE/JULY	93.9° JUNE/JULY
	AIRPORT REFERENCE CODE (ARC)	ARC C-II	ARC C-II
	GPS APPROACH	YES	YES
RUNWAY END COORDINATES (NAD 83)		EXISTING ULTIMATE	
RUNWAY 3	LATITUDE 109°36'37.00" W	031°27'49.60" N 109°36'24.38" W	
RUNWAY 21	LATITUDE 109°35'35.56" W	031°28'41.91" N 109°35'13.08" W	
RUNWAY 17	LATITUDE 109°36'16.18" W	031°28'27.33" N 109°36'16.18" W	
RUNWAY 35	LATITUDE 109°36'15.87" W	031°27'15.20" N 109°36'15.90" W	
RUNWAY 8	LATITUDE 109°36'50.63" W	031°28'26.68" N ABANDON	
RUNWAY 26	LATITUDE 109°35'29.78" W	031°28'26.46" N ABANDON	
NOTE: ALL LATITUDE/LONGITUDE COORDINATES SHOWN ON THIS SET OF DRAWINGS ARE 1983 NORTH AMERICAN DATUM (NAD 83).			

THE PREPARATION OF THIS DOCUMENT WAS FINANCED IN PART THROUGH A PLANNING GRANT FROM THE FEDERAL AVIATION ADMINISTRATION (FAA) AS PROVIDED UNDER THE CONVENTION OF AVIATION AND AIRPORT IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEW OR POLICY OF THE FAA. ACCEPTANCE OF THIS DOCUMENT BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED THEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE

PUBCO LAKES

SUBMITTED *Chandler Peeler* APPROVED _____
Nicholas W. Dura | Cochise County Board

Date 10/30/77 Date _____

3. *Leucosia* *leucostoma* *leucostoma*

SUBMITTED *[Signature]* APPROVED *[Signature]*
Ronald D. Schreiter, P.E. BDI Planning Advisory Committee

Date 08/30/97 Date _____

FAA APPROVAL	ADOT APPROVAL
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10. The following table summarizes the results of the study.

10. The following table summarizes the results of the study.

10. The following table shows the number of hours worked by each employee in a company.

1. The following table summarizes the results of the study.

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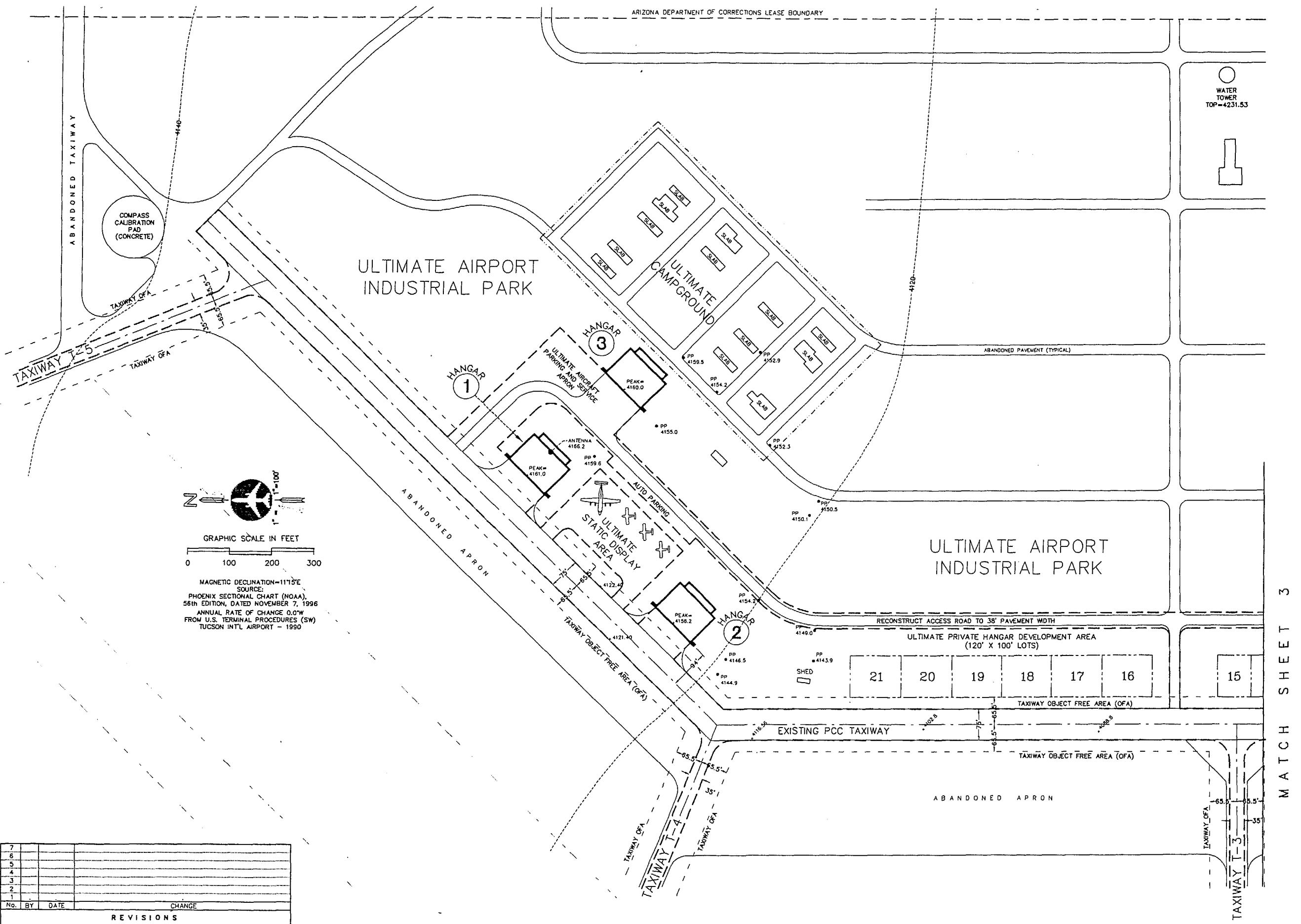
Prepared by:
NICHOLAS J. PELA and ASSOCIATES

The logo for Aviation Planners International consists of a stylized graphic of a globe or map of the world on the left, followed by the company name "AVIATION PLANNERS INTERNATIONAL" in a bold, sans-serif font.

 and **Crescent Planning**

SHEET 1 OF 10

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TERMINAL AREA LAUNCH - NORTH
Bisbee-Douglas International Airport
Douglas/Cochise County, Arizona

Douglas/Cochise County, Arizona

Douglas/Cochise County, Arizona

AVIATION PLANNERS
and
Ground Planning
ENGINEERS AND PLANNERS

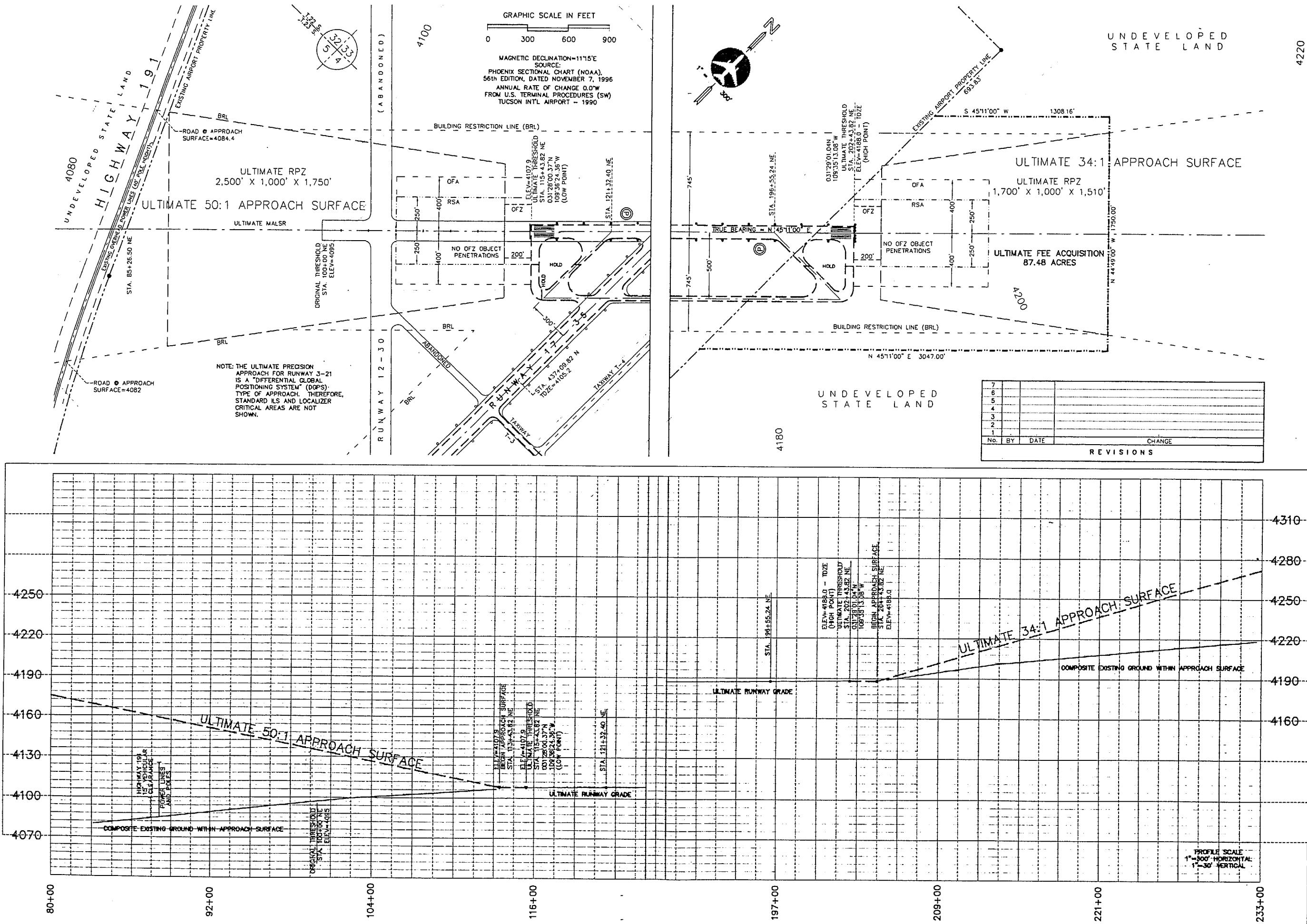
RUNWAY 03-21 APPROACH PLAN and PROFILE
Bisbee-Douglas International Airport
 Douglas/Cochise County, Arizona

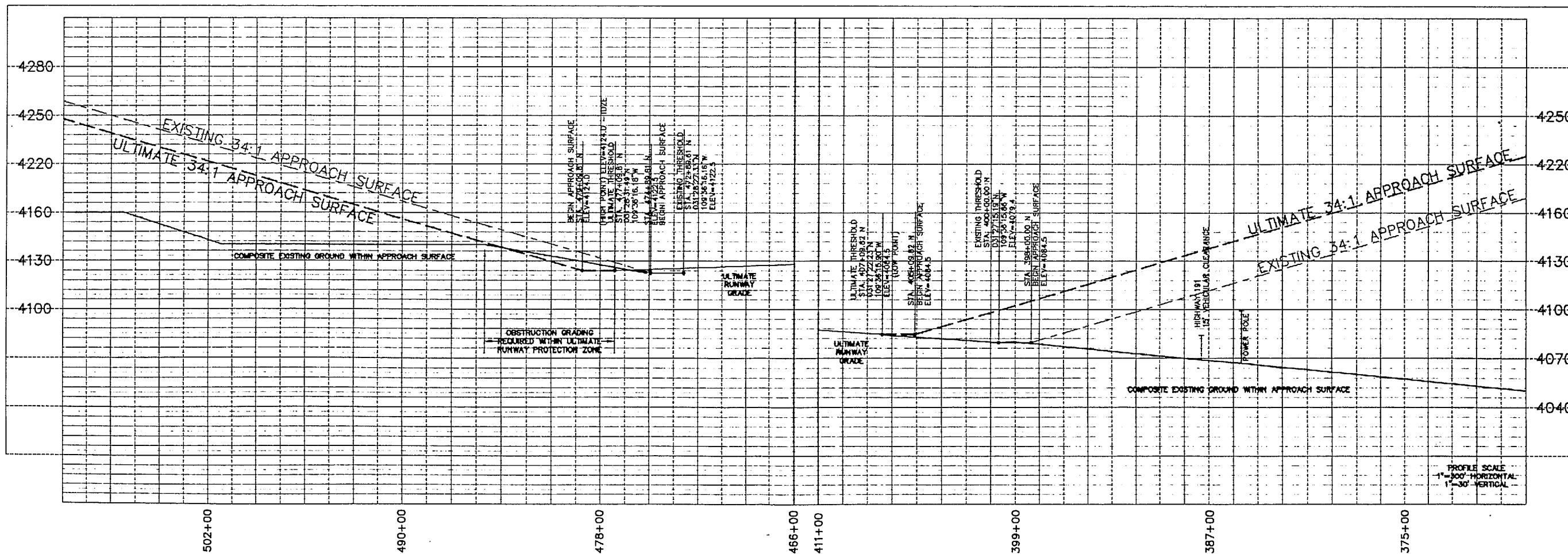
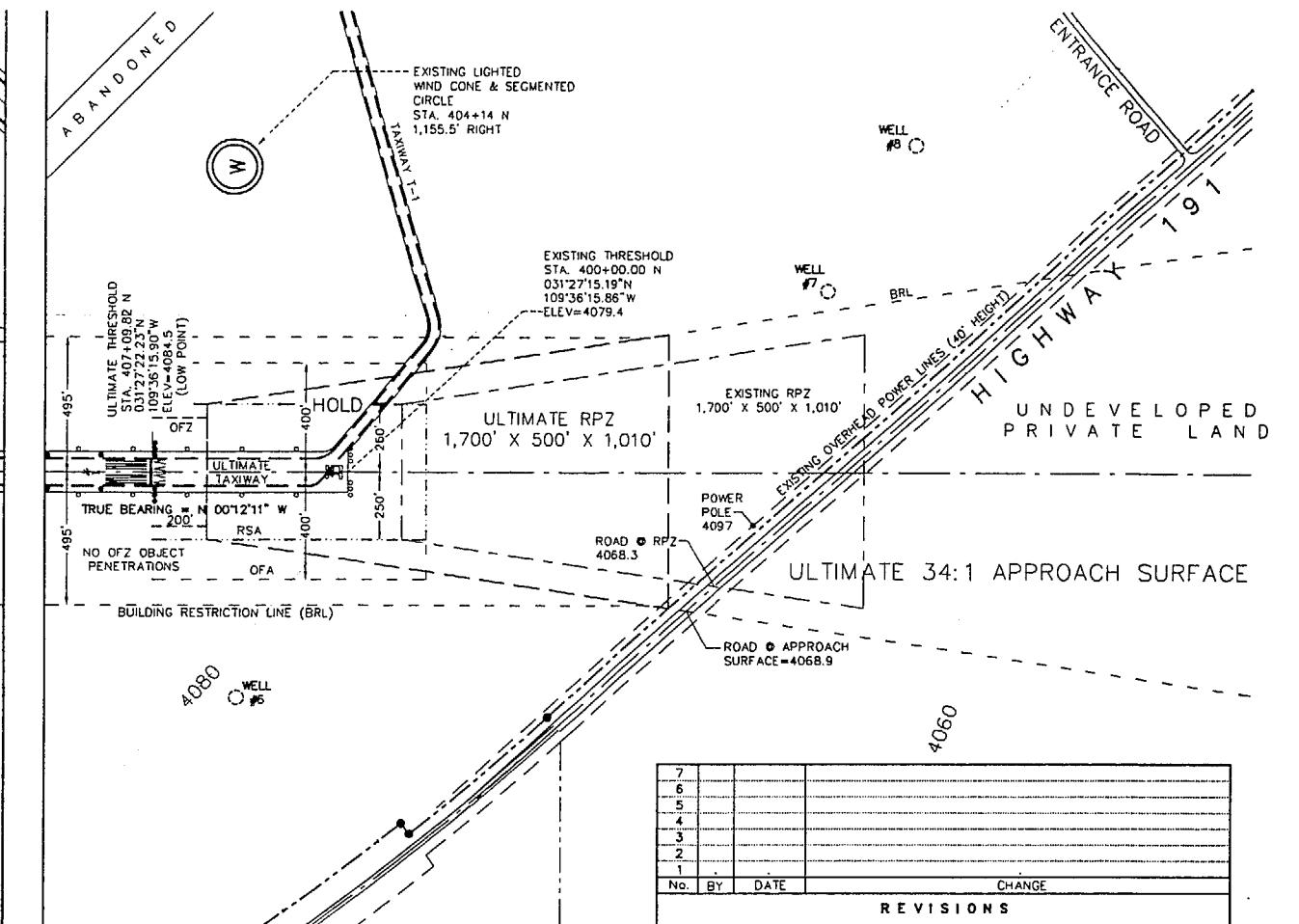
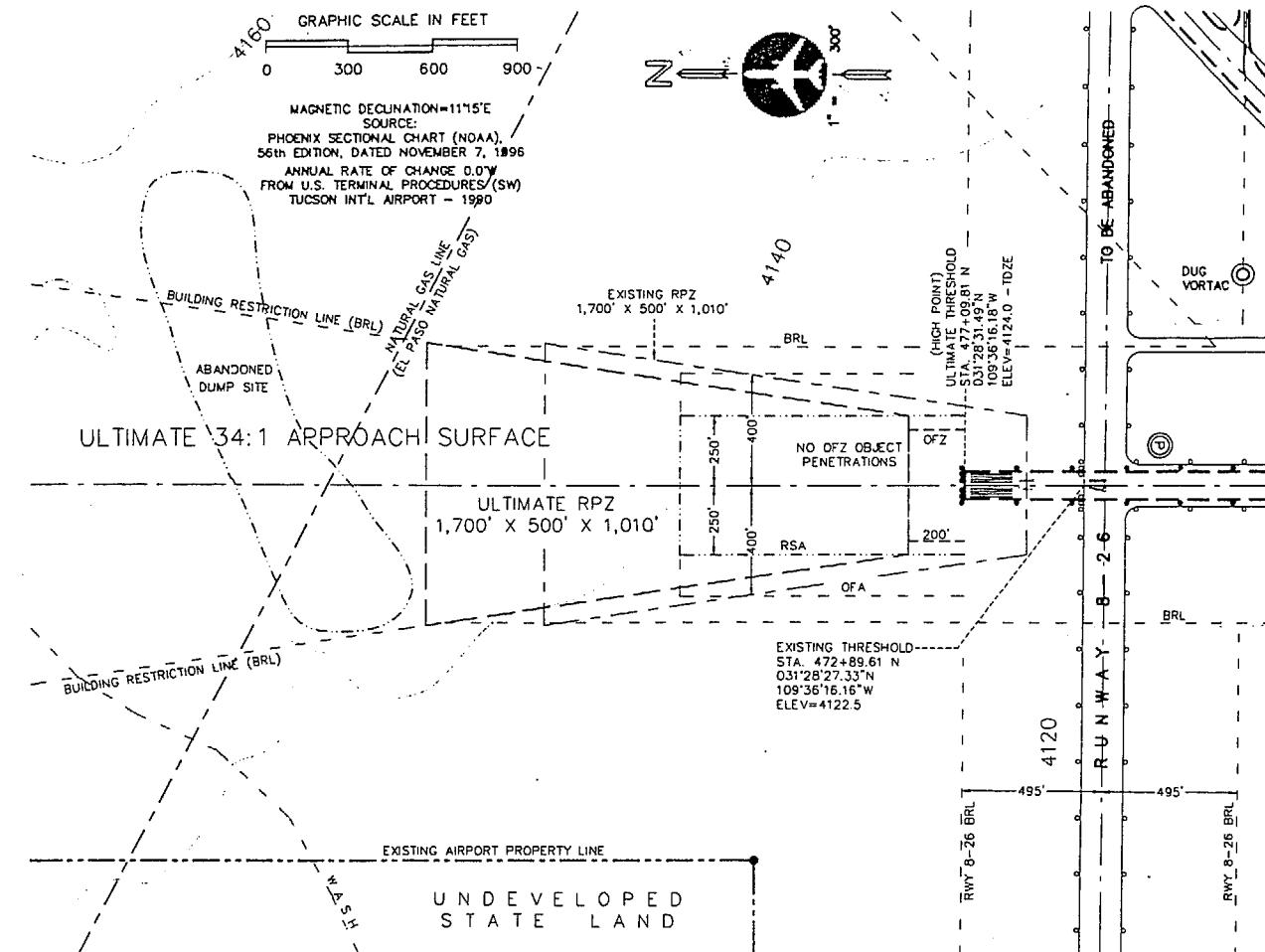
Prepared by:
NICHOLAS J. PELA and ASSOCIATES
 AVIATION PLANNERS
 and
Gunnell Fleming
 ENGINEERS and PLANNERS



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 Checked by: *[Signature]* Date: 08/30/97

Sheet 5 of 10





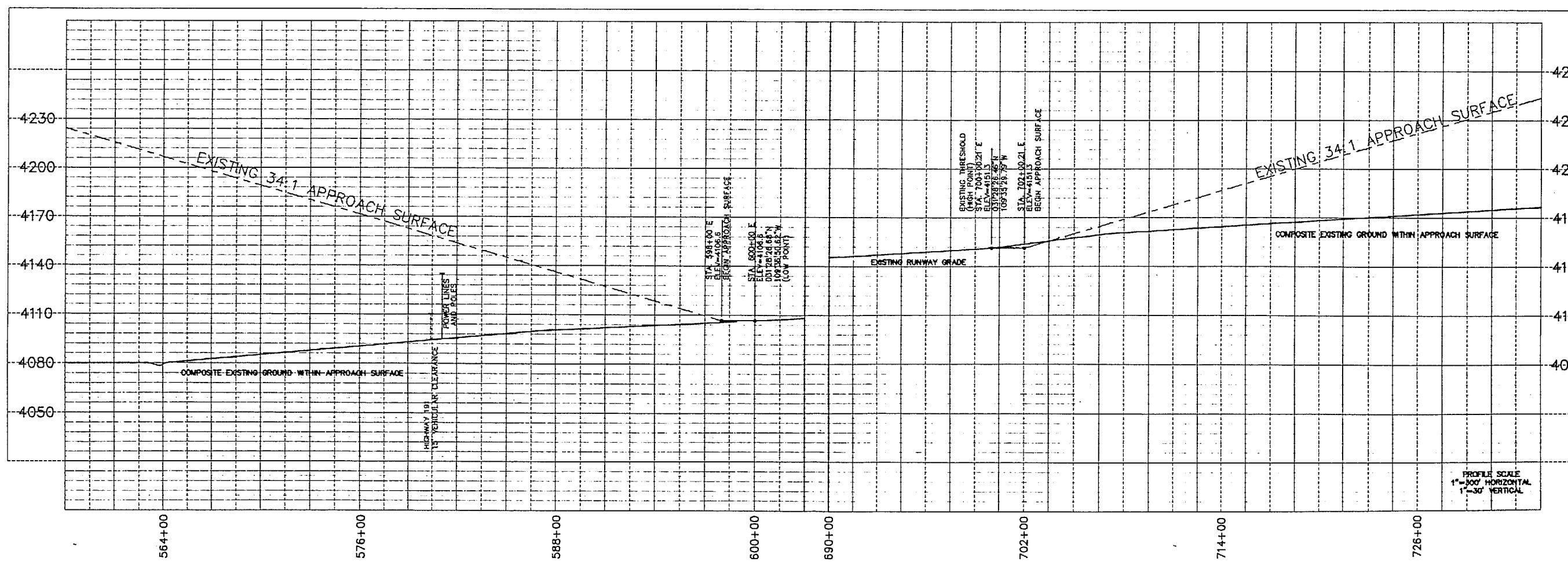
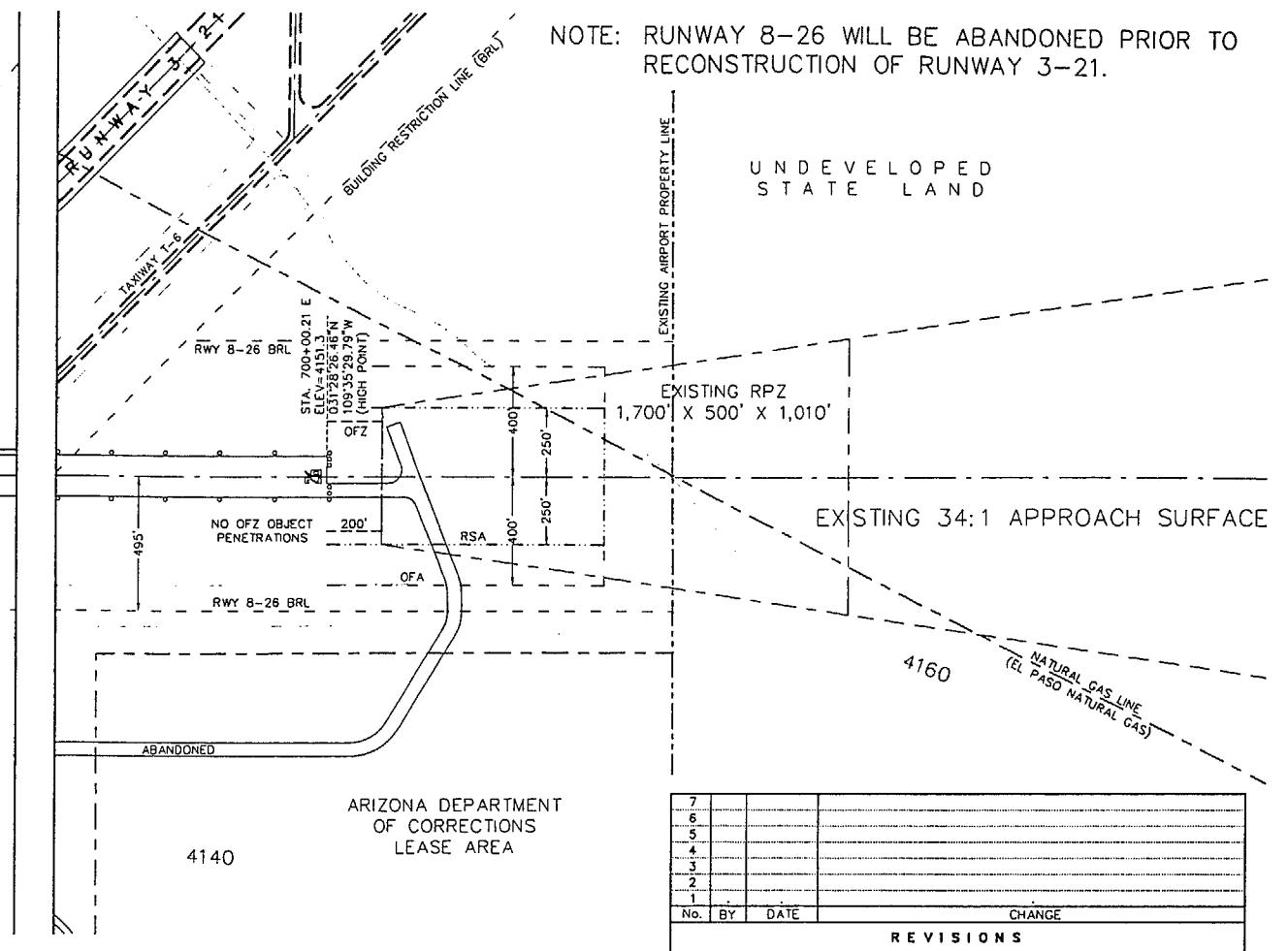
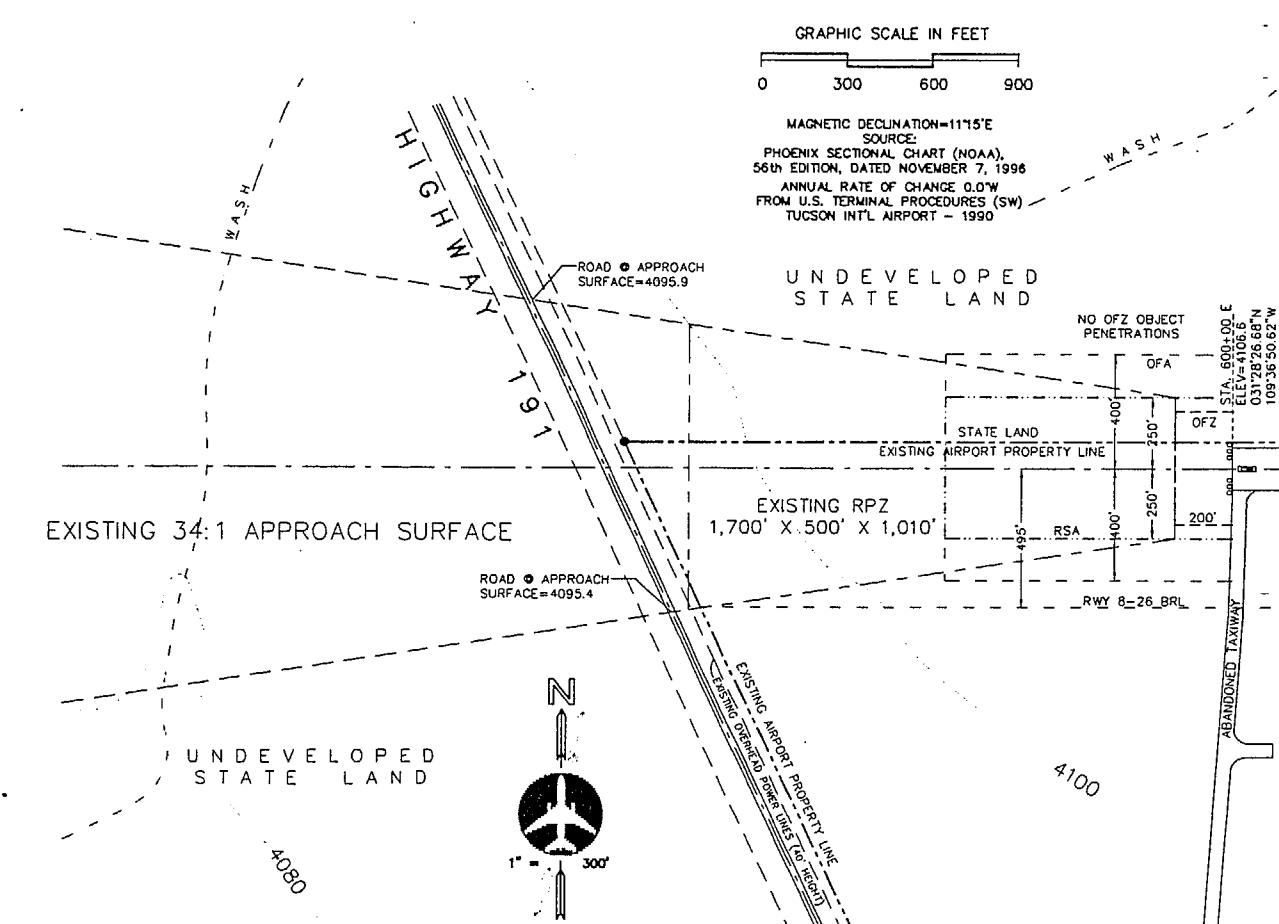
RUNWAY 17-35 APPROACH PLAN and PROFILE

Bisbee-Douglas International Airport

Douglas/Cochise County, Arizona

NICHOLAS J. PELA and ASSOCIATES
AVIATION PLANNERS
and
**Fleming Fleming**
ENGINEERS and PLANNERS

Drawn Sept 28 96 / 30 / 97
Credited Oct 1 96 / 30 / 97

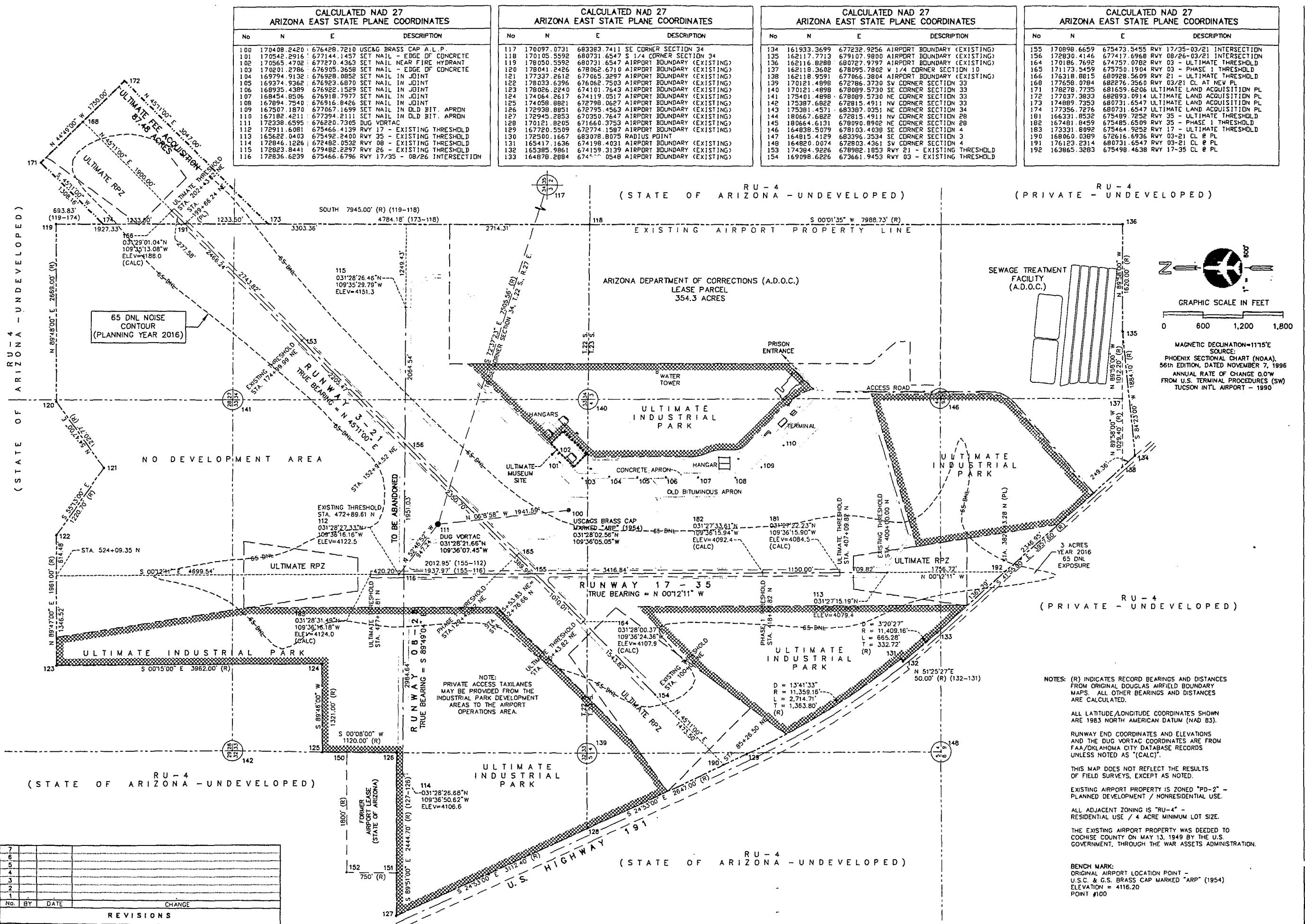


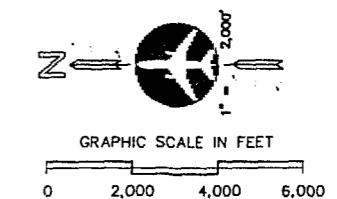
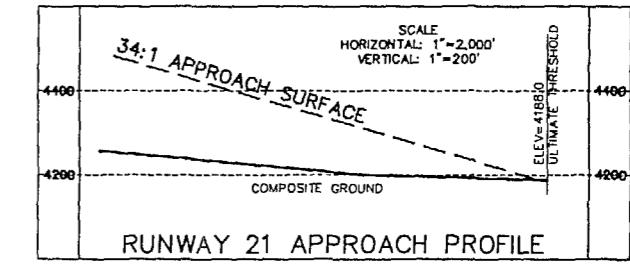
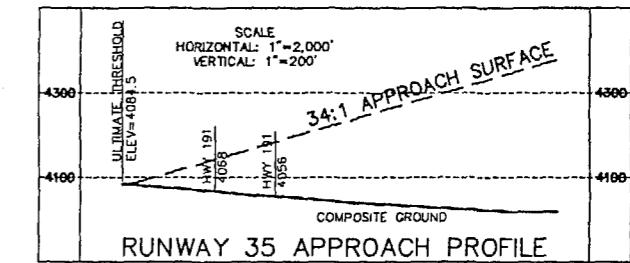
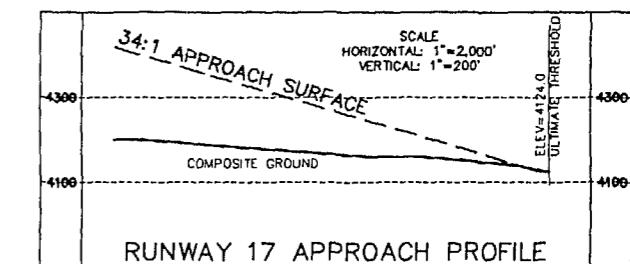
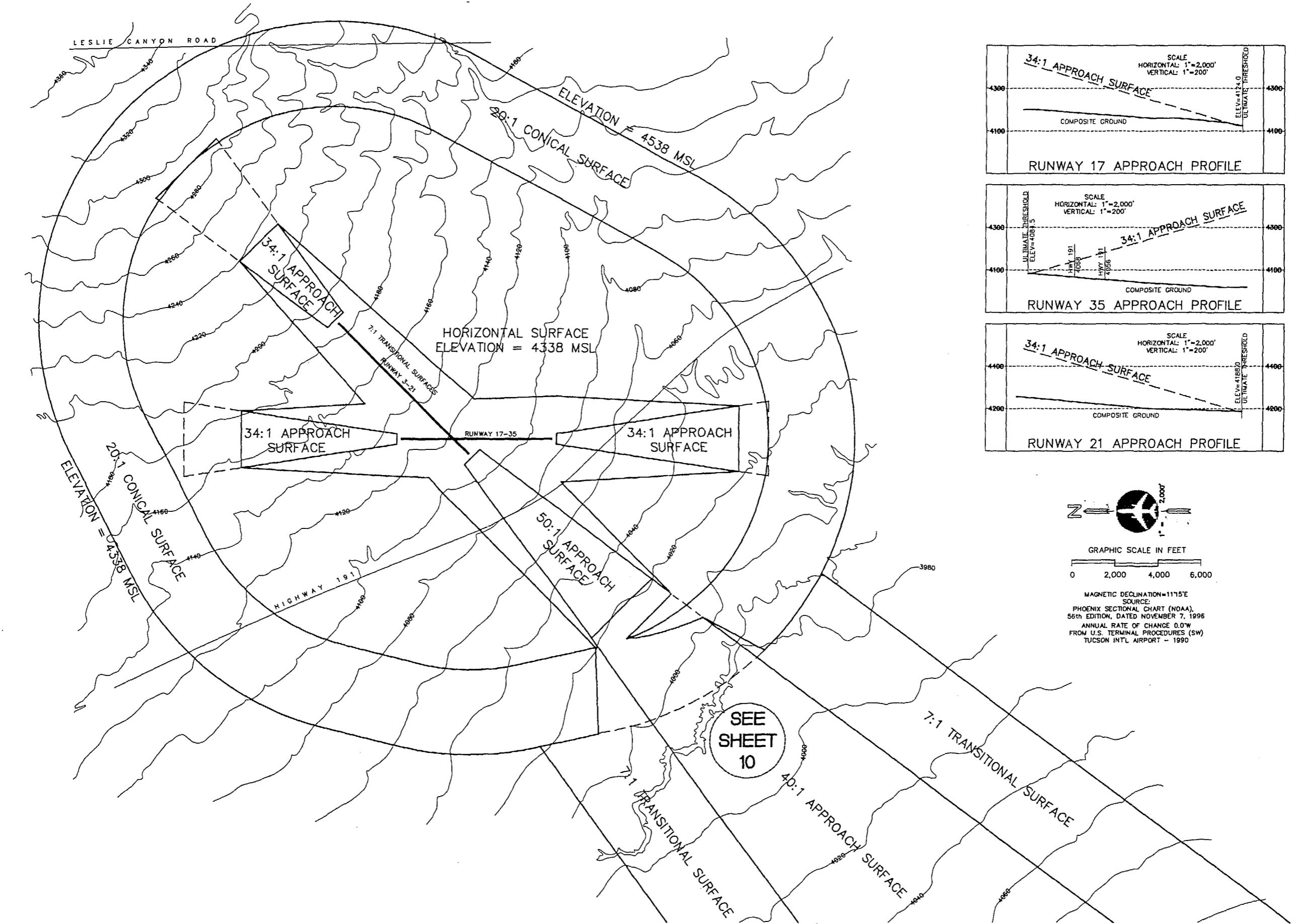
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Check by R. M. Johnson 08/20/97
Sheet 7 of 10

RUNWAY 08-26 APPROACH PLAN and PROFILE
Bisbee-Douglas International Airport
Douglas/Cochise County, Arizona

AIRPORT LAND INVENTORY and HORIZONTAL CONTROL PLAN

Bisbee-Douglas International Airport
Douglas/Cochise County, Arizona.





MAGNETIC DECLINATION=11°15'E
SOURCE:
PHOENIX SECTIONAL CHART (NOAA),
56th EDITION, DATED NOVEMBER 7, 1996
ANNUAL RATE OF CHANGE 0.0W
FROM U.S. TERMINAL PROCEDURES (SW)
TUCSON INT'L AIRPORT - 1990

